

*CLAIM AMENDMENTS*

1.-11. (Canceled)

12. (Currently Amended) A method of enhancing the specificity of a plant lipoxygenase for position 11 of arachidonic acid comprising changing at least one amino acid in a wild type plant lipoxygenase, characterized in that the change takes place at position 576 of potato tuber lipoxygenase having accession number S73865 in the EMBL database or at a corresponding position in a lipoxygenase of another plant species, whereupon the specificity of the plant lipoxygenase for position 11 of arachidonic acid is enhanced.

13. (Previously Presented) The method according to claim 12, characterized in that the change at position 576 results in the presence of a Phe residue at position 576.

14. (Previously Presented) The method according to claim 12, characterized in that the amino acid change is effected by directed mutagenesis.

15. (Previously Presented) The method according to claim 13, characterized in that the amino acid change is effected by directed mutagenesis.

16. (Previously Presented) An isolated or purified lipoxygenase obtainable by the method of claim 12.

17. (Previously Presented) An isolated or purified lipoxygenase obtainable by the method of claim 13.

18. (-Previously Presented) An isolated or purified nucleic acid encoding the lipoxygenase of claim 16.

19. (Previously Presented) An isolated or purified nucleic acid encoding the lipoxygenase of claim 17.

20. (Previously Presented) An isolated or purified vector comprising the nucleic acid of claim 18.

21. (Previously Presented) An isolated or purified vector comprising the nucleic acid of claim 19.

22. (Previously Presented) A cell comprising the nucleic acid of claim 18 and/or a vector comprising said nucleic acid.

23. (Previously Presented) A cell comprising the nucleic acid of claim 19 and/or a vector comprising said nucleic acid.

24. (Withdrawn) A plant or a plant part comprising the cell of claim 22.

25. (Withdrawn) A plant or a plant part comprising the cell of claim 23.

26. (Previously Presented) A method for producing 11-perhydroxy arachidonic acid or the reduced 11-hydroxy derivative thereof comprising incubating arachidonic acid with the lipoxygenase of claim 16 under appropriate conditions, whereupon 11-perhydroxy arachidonic acid is obtained, and, optionally, reducing the 11-perhydroxy arachidonic acid, whereupon the reduced 11-hydroxy derivative thereof is obtained.

27. (Previously Presented) A method for producing 11-perhydroxy arachidonic acid or the reduced 11-hydroxy derivative thereof comprising incubating arachidonic acid with the lipoxygenase of claim 17 under appropriate conditions, whereupon 11-perhydroxy arachidonic acid is obtained, and, optionally, reducing the 11-perhydroxy arachidonic acid, whereupon the reduced 11-hydroxy derivative thereof is obtained.

28. (Withdrawn) An arachidonic acid derivative containing a hydroxy group at position 11.